UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/431,365	11/01/1999	CARL G DEMARCKEN	09765/021001	8582

7590   11/20/2002

DENIS G MALONEY
FISH & RICHARDSON PC
225 FRANKLIN STREET
BOSTON, MA   02110-2804

EXAMINER
PORTER, RACHEL L

ART UNIT	PAPER NUMBER
3626	

DATE MAILED: 11/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	**Applicant(s)**
Office Action Summary	09/431,365	DEMARCKEN, CARL G
	Examiner	**Art Unit**
	Rachel L. Porter	3626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _09 July 2002 and 28 August 2002_ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-26_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-26_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

　　If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____ .

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

　　a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4)☐ Interview Summary (PTO-413) Paper No(s). _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: .

Recent Statutory Changes to 35 U.S.C. § 102(e)

On November 2, 2002, President Bush signed the 21st Century Department of Justice Appropriations Authorization Act (H.R. 2215) (Pub. L. 107-273, 116 Stat. 1758 (2002)), which further amended 35 U.S.C. § 102(e), as revised by the American Inventors Protection Act of 1999 (AIPA) (Pub. L. 106-113, 113 Stat. 1501 (1999)). The revised provisions in 35 U.S.C. § 102(e) are completely retroactive and effective immediately for all applications being examined or patents being reexamined. Until all of the Office's automated systems are updated to reflect the revised statute, citation to the revised statute in Office actions is provided by this attachment. This attachment also substitutes for any citation of the text of 35 U.S.C. § 102(e), if made, in the attached Office action.

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 prior to the amendment by the AIPA that forms the basis for the rejections under this section made in the attached Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

For more information on revised 35 U.S.C. § 102(e) visit the USPTO website at www.uspto.gov or call the Office of Patent Legal Administration at (703) 305-1622.

DETAILED ACTION

Notice to Applicant

1.   This communication is in response to the amendments received on 7/9/02 and 8/28/02. Claims 1-26 are pending. Claims 3-26 are newly added. Claims 1-2 have been amended.

Drawings

2.   The objections to the drawings which were raised in the previous Office Action (Paper No. 5) are hereby withwdrawn due to the amendments received 7/9/02 and 8/28/02.

Specification

3.   The objections to the disclosure that were raised in the previous Office Action (Paper No. 5) are hereby withdrawn due to the amendments received 7/9/02 and 8/28/02.

Claim Rejections - 35 USC § 112

4.   The rejection of claims 1 and 2 under 35 U.S.C. 112, second paragraph, as being indefinite, are hereby withdrawn due to the amendments received 7/9/02 and 8/28/02.

Response to Arguments

5.   Applicant's arguments with respect to claim 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

6.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the
United States before the invention thereof by the applicant for patent, or on an international application
by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this
title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act

of 1999 (AIPA) do not apply to the examination of this application as the application

being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35

U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7.   Claims 9,10,12-17, and 24 are rejected under 35 U.S.C. 102(e) as being

anticipated by Lynch et al (US Patent No. 6,119,094—referred to hereinafter as Lynch).

As per claim 9, Lynch teaches a method for generating a diverse set of gavel

options, the method comprising:

-   receiving a candidate set of travel options; (col. 6, lines 41-57)

-   for a plurality of travel requirements, selecting one or more travel options for a

    specified travel requirement that satisfies that specified travel requirement;

    and (col. 7, line 29- col. 8, line 14)

-   combining the one or more travel options selected for the plurality of travel

    requirement to generate the diverse set of travel options. (col. 8, lines 18-45)

As per claim 10, Lynch teaches the method of claim 9 further comprising rendering the diverse set of travel options on an output device. (col. 8, lines 56-58)

As per claim 12, Lynch teaches the method of claim 9 wherein at least one of the travel requirements within the plurality is not a user entered travel requirement. (col. 7, lines 34-41) The requirements/parameters that are generated are broader than those requested by the user.

As per claims 13 and 14, Lynch teaches the method of claim 9 wherein the travel requirements comprise, all trips on a predefined carrier, all non-stop trips, all outbound trips departing in a predefined time period (e.g. morning, afternoon, evening or a predefined date) all return trips departing in a predefined time period, all non-stop trips on a predefined airline, or all trips with an outbound departure on a first predefined date and a return trip on a second predefined date. (col. 6, lines 31-38; col. 7, lines 34-45)

As per claim 15, Lynch teaches the method of claim 9 further comprising defining a template of travel requirements. (col. 6, lines 49-53) The genetic algorithm includes chromosome represents (i.e. defines) a possible solution.

As per claim 16, the method of claim 15 wherein generating a plurality of travel requirements comprises generating a plurality of travel requirements based at least in part on the template and the candidate set of travel options. (col. 6, lines 41-53; col. 7, lines 29-45) The genetic algorithm, which includes the chromosome (i.e. template), is trained based on the travel inventory information (i.e. large candidate pool of options) and the genetic algorithm subsequently develops requirements.

As per claim 17, Lynch teaches the method of claim 15, as explained in the rejection of claim 15. Lynch further teaches a method further comprising analyzing the candidate set of travel options to determine parameter values for the template. (col. 6, lines 41-57) The genetic algorithm, which includes a chromosome (i.e. template), is "trained" based on the travel inventory information (i.e. large candidate pool of options) and subsequently develops requirements/parameter.   This "training" process is a process by which parameter values (i.e. assessments of the fitness of solutions determined by the fitness function) are established.

As per claim 24, Lynch teaches an article of manufacture having computer-readable program portions embodied therein for generating a diverse set of travel options, the article comprising instruction for causing a processor to:

-   receive a candidate set of travel options; (col. 6, lines 41-57)

-   generate a plurality of travel requirements, (col. 6, lines 50-57)

-   select one or more travel options for each of the plurality of travel requirement that satisfy that respective travel requirement; and (col. 7, line 29- col. 8, line 14)

-   combine the one or more travel options selected for each requirement to generate a diverse set of travel options. (col. 18, lines 18-45)

The present claim recites a series of steps, embodied on an article of manufacture as instructions for causing a processor to perform the recited steps. Insofar as the recited steps have been disclosed by Lynch and have been shown to be performed by a computer, it is respectfully submitted that the Lynch reference teaches the recited article

of manufacture having computer-readable program portions embodied for generating a

diverse set of travel options.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1-8, 11, and 18-19 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lynch et al (US Patent No. 6,119,094—referred to hereinafter as

Lynch).

As per claims 1 and 2, Lynch teaches a travel planning system comprising:

-   a requirements generator module configured to generate a plurality of travel

    requirements; (col. 6, lines 50-57)

-   a selection module configured to output a set of diverse travel options smaller

    than a candidate set of travel options by selecting from the candidate set of

    options, for each travel requirement in the plurality, one or more travel options

    that satisfy that travel requirement, (col. 6, lines 41-57; col. 8, lines 46-60)

Lynch teaches the travel planning system of claim 1 substantially as cited above. Lynch

does not specifically teach that the original candidate pool is represented by a compact

representation that is a pricing graph but does teach a system wherein a candidate list

of possible low-cost itineraries is compactly represented (i.e. as a pricing table). (col. 8,

lines 46-60). At the time of the Applicant's invention, it would have been obvious to one

of ordinary skill in the art to modify the system of Lynch to compactly display the original

as well as the final candidate pools (e.g. as pricing graphs). As suggested by Lynch,

one would have been motivated to do this to further facilitate the identification and

selection of alternate low-cost travel arrangements from a plurality of sources for users.

(col. 2, lines 3-8; col. 8, lines 56-65).

As per the limitations of claim 3, see Lynch: col. 5, lines 31-46; col. 6, line 64- col.

7, line 2; col. 8, lines 46-56; Figure 2.

As per claim 4, Lynch teaches the travel planning system of claim 1, as explained

in the rejection of claim 1, further comprising:

- a travel option generator module configured to generate a first ordered set of

    travel options using a first preference function and a second ordered set of

    travel options using a second preference function, and (col. 8, lines 15-17)

- wherein the selection module is further configured to output a set of diverse

    travel options for each of the first and second ordered set of travel options.

    (col. 8, lines 15-17)

As per claim 5, Lynch teaches the travel planning system of claim 1 wherein the

requirements generator module further comprises a template. (col. 6, lines 49-53—e.g.

the chromosome of the genetic algorithm)

As per claim 6, Lynch teaches the travel planning system of claim 1 wherein at

least one of the travel requirements within the plurality is not a user entered travel

requirement. (col. 7, lines 34-41) The requirements/parameters that are generated are broader than those requested by the user.

As per claims 7 and 8, Lynch teaches the travel planning system of claim 1 wherein travel requirements comprise all trips on a predefined carrier, all non-stop trips, all outbound trips departing in a predefined time period (e.g. morning, afternoon, evening or a predefined date) all return trips departing in a predefined time period, all non-stop trips on a predefined airline, or all trips with an outbound departure on a first predefined date and a return trip on a second predefined date. (col. 6, lines 31-38; col. 7, lines 34-45)

As per claim 11, Lynch teaches the method of claim 9, as explained in the rejection of claim 9. Lynch does not specifically teach a method further comprising eliminating from the plurality of travel requirements a first travel requirement when the one or more travel options selected for a second travel requirement satisfy the first travel requirement. However, Lynch does teach a method wherein the number of candidate solutions are repeatedly sifted to reduce the number of possible travel options (col. 6, lines 43-57) and wherein a primary advantage of the invention is to reduce the amount of time required identify satisfactory travel options. (col. 2, lines 18-21) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the method of Lynch to eliminate a travel requirement if the travel options it would yield are generated by a second requirement. As suggested by Lynch, one would have been motivated to do this reduce the amount processing time required by minimizing system task redundancy.

As per claims 18 and 19, Lynch teaches the method of claim 15 as explained in the rejection of claim 15. Lynch does not specifically teach the detailed contents of the chromosome for the genetic algorithm, but does teach that the chromosome provides a template for possible solution(s). (col. 6, lines 49-51). At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to include the trips on a particular carrier, various arrival/departure times, types of flights (direct vs. non-direct) and the like as possible solutions for when searching for low-cost travel options for a user. As suggested by Lynch, one would have been motivated to do this to maximize the likelihood of identifying all suitable low-cost travel alternatives (col. 1, lines 46-53)

10.   Claims 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch in view of Webber et al (US Patent No. 5,331,546—referred to hereinafter as Webber)

As per claim 20, Lynch teaches a method for generating a diverse set of travel options, the method comprising:

- generating a first ordered set of travel options using a first preference function; (col. 7, lines 46- col. 8, lines 14)

- generating a second ordered set of travel options using a second preference function, the second preference function being different from the first preference function; (col. 8, lines 15-17)

- combining according to a travel requirement selected ones of the first set and second set of travel options to generate the diverse set of travel options. (col. 8, lines 18-45)

Lynch teaches a method comprising the above steps as cited but does not specifically teach a method further comprising selecting a predefined number of best travel options from the first and second sets of travel options that satisfy a first or second preference function. However, Lynch does teach a method which considers first and second preference functions (e.g. business and personal preferences) when developing a list of low-cost travel options. Webber teaches a system wherein first and second ordered sets are narrowed (i.e. selecting a predefined number of best travel options) before combining the sets to generate a diverse set of travel options. (col. 7, line 53-col. 8, line 2) At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to modify the method of Lynch with the teaching of Webber to include the additional steps of pruning the first and second travel options sets to generate best travel option sets. As suggested by Webber, one would have been motivated to do this to ensure that the best travel options were kept in the sifting process and made available to further assist the travel arranger and/or traveler in selecting one particular itinerary that balances trade-offs among various factors. (col. 3, line 64-col. 4, line 4)

As per claim 21, Lynch and Webber teach the method of claim 20 as explained in the rejection of claim 20. Lynch teaches a method further comprising generating a plurality of travel requirements, (col. 7, lines 29-49) but does not disclose the steps of selecting a best travel options set (i.e. selecting a predefined number of options).

Webber teaches a method wherein selecting a predefined number if best travel options

from the first set or second set further comprises selecting, for each travel requirement,

one or more travel options from the first set or second set that satisfy that respective

travel requirement. (Webber: col. 7, line 53-col. 8, line 2) At the time of the Applicant's

invention, it would have been obvious to one of ordinary skill in the art to modify the

method of Lynch with the teaching of Webber for the reasons set forth in the rejection of

claim 20.

As per 22, Lynch teaches a method further comprising displaying the diverse set

of travel options to a user. (col. 8, lines 56-58)

As per claim 23, Lynch and Webber teach the method of claim 20 as explained in

the rejection of claim 20. Furthermore, Lynch teaches a system wherein a (first)

preference function orders the travel options based at least in part on price (Lynch: col.

7, line 46- col. 8, line 14) but does not specifically teach that a second preference

function orders travel option using another criterion. Webber teaches a system wherein

a (second) preference function orders the travel options based at least in part on travel

time or number of stops. (Webber: col. 7, lines 59-65) At the time of the Applicant's

invention, it would have been obvious to modify the system of Lynch to rank travel

options using additional criteria. As suggested by Webber, one would have been

motivated to do this to further assist the travel arranger and/or traveler in selecting one

particular itinerary that has both the lowest price and balances the trade-off between

price and convenience. (col. 3, line 64-col. 4, line 4)

Claim 25 recites the method of claim 20 as an article of manufacture having

computer-readable program portions that cause a processor to perform the steps

recited in claim 20. Insofar as the recited steps have been disclosed by Lynch and

Webber as being performed by a computer, it is respectfully submitted that the Lynch

and Webber references disclose the recited article of manufacture having computer-

readable program portions embodied for generating a diverse set of travel options.

As per claim 26, the limitations of this claim are addressed by the rejections of

claims 21 and 25, and incorporated herein.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

-    Whitesage (US Patent No. 5,191,523) teaches a system and method for

     calculating and comparing travel costs on a per-unit basis.

-    Ahlstrom (US Patent No. 4,862,357) teaches a system and method for ranking

     generated itineraries.

12.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Rachel L. Porter whose telephone number is 703-305-

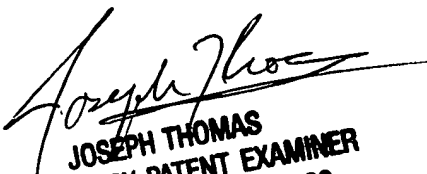0108. The examiner can normally be reached on M-F, 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Joseph Thomas can be reached on (703)305-9588. The fax phone

numbers for the organization where this application or proceeding is assigned are

(703)305-7687 for regular communications and (703)305-7687 for After Final

communications.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703)308-

1113.

RP
November 18, 2002

JOSEPH THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600